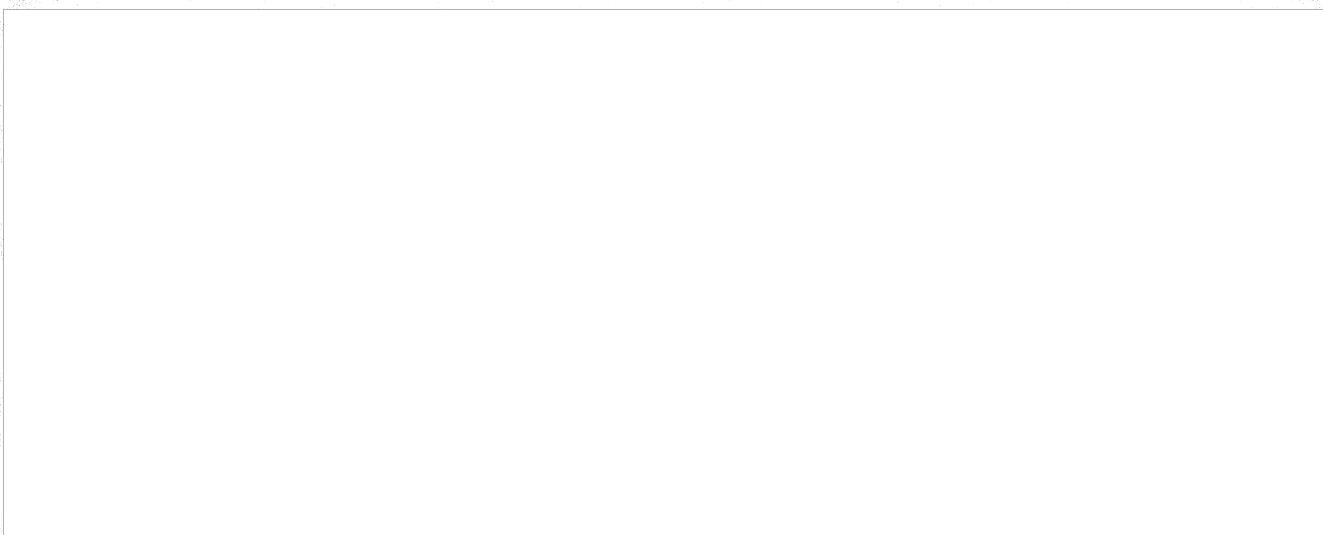
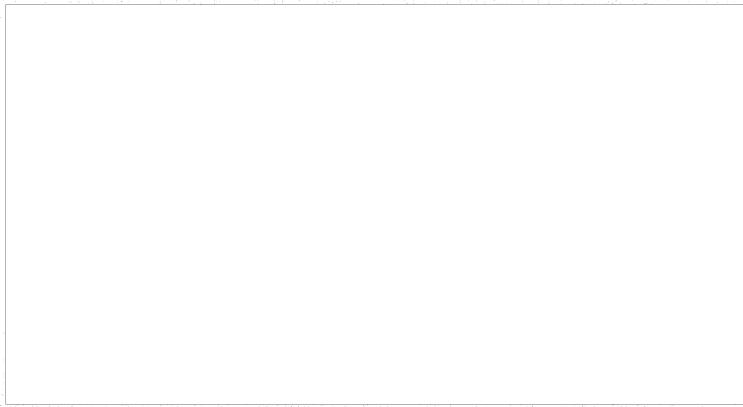


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"History of Volcanic Activity in the Soviet Union"

Excerpt: pages 25 to 28 7 Author and Source Unknown



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HISTORY OF VOLCANIC ACTIVITY IN THE SOVIET UNION

(Excerpt pp 25-29)

(Author and source unknown)

Vulcanological investigations were started only under Soviet guidance and by academician A. N. Zavaritskiy's study in 1931 of the volcano Avachin. The history of this volcano was clarified and for the first time in the history of Russian science the composition of volcanic gases and the type of eruptions characteristic for this volcano were established.

A. N. Zavaritskiy pointed out and explained the connection between the rectilinear (by rows) disposition of Kamchatka's volcanoes and their internal structure with the probable direction of cracks in the terrestrial crust.

In the same year R. I. Mipp began to study the hot sources of Kamchatka. During the next year, 1932, V. S. Kulakov was fortunate to be the first Russian geologist to observe and study in USSR territory the eruption of Tuyla, a side volcano of the Klyuchevsk volcano.

In 1935, on the initiative of academician F. Yu. Levinson-Lessing, a vulcanological station, Academy of Sciences USSR, was organized near the Klyuchevskaya Sopka volcano, the most active volcano of Kamchatka.

The date 1 September 1935 represents the beginning of permanent vulcanological studies, consisting mainly of continuous observations of the recent activity of Klyuchevsk and some other volcanoes, particularly during eruptions, and of investigations of the type and mechanism of eruptions.

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The scientific associates of the station V. I. Vladavets, A. A. Menyaylov, S. I. Naboko, B. F. Popkov and V. P. Popkov, studied the Klyuchevsk volcano since the organization of the station. They investigated during a whole period consisting of two full cycles of eruptions, Klyuchevsk volcano, eruptions of Avachin, Bebeluch, Tolbachik, Zhupanovskiy, Karymskiy and Malyy Semenachik, besides a number of extinct and self-taric activities.

As a result of these investigations many important and interesting phenomena were discovered, which we are unable to discuss in this book, however we should note certain conditions surrounding our work, under which these investigations were performed.

The Klyuchevsk volcano, 4800 meters high, is difficult to climb. The peak was first reached by D. Gauss in 1788 and thereafter was unscaled until Soviet times. During Soviet times until 1949 ten ascents were made: One in 1931; three ascents on Klyuchevsk volcano peak in 1935, including two descents into the crater (first descent by geologist V. S. Kulakov, N. Vedop'yanov and Semenov and second by chemist A. N. Trotskiy and S. D. Koptelov); two ascents in 1936, the second ascent being made by geologist S. I. Naboko, the first and only woman having been on the peak of Klyuchevsk volcano; in 1937 during weak volcanic eruptions an ascent by geologist A. A. Menyaylov; the last ascents were made in 1940, 1945 and 1948.

I shall not describe in detail the scaling of the Klyuchevsk volcanic peak, but shall mention the remarkable ride by two scientific associates of the station - namely, geologist B. F. Popkov and chemist I. Z. Ivanov - on the moving lava stream.

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In order to measure the temperature of melted lava and gather gases from it these two self-sacrificing scientific workers, who can rightfully be called heroes of science, jumped on a crust of the flowing stream and performed their scientific observations while navigating on it. The temperature of the lava crust under the soles of their feet was 270-300°. It was during November and a strong wind was blowing, but nonetheless, despite their asbestos boots, they had to stay intermittently on one foot and then the other foot in order to cool them off. The crust itself was in such a state that it could be pierced with an iron rod. At a depth of 40 cm the lava's temperature was 870°. All this time bubbles were bursting on the crust and liberating gases. The bold investigators tried to catch them, but each time that they covered the bubble by a funnel the bubble would crack on the side and the gases escape. Then they bored a hole into the crust and took a sample of the gases.

After one more measurement of the lava's temperature, they succeeded in jumping from the flowing crust onto the solidified immobile edge of the stream.

This is the way that the workers of Vulcanologic station gathered and are still gathering new information and new facts on the volcanoes of Kamchatka and their activity. The present book owes its existence to this station, because thanks to it we know much more about the life of volcanoes, particularly those of Kamchatka, than we did before its establishment.

Before ending this chapter, we must say something about the geysers of Kamchatka.

The existence of geysers on Kamchatka was known long ago, but only information on small and weak geysers was possessed.

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In 1941 T. I. Ustinova discovered near the volcano Kikhpinych in a quite new location a large group of big and small geysers, situated along the small river Geysermaya, near the Kronots bay.

As for the volcanoes of the Kuril Islands, they have not yet been explored. We possess only fragmentary information on the works of V. P. Golovin and F. Krusenstern, D. Miln and G. Snow, published in the 19th century and at the start of the 20th. Only G. V. Korsunskaya, who studied the Kuril Islands in 1946, has published some more detailed information on volcanoes of the southern part of the Kuril chain.

Maps and Legends follow

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(A) KEY

1. HISTORY OF VOLCANIC ACTIVITY IN THE SOVIET UNION

(Dotted lines represent the period of activity)

2. Kamchatka
 Kuril Islands
 Commander Islands
 Sakhalin
 Sikhote-Alin Seaside
 Near Amur
 Chukotka
 Anadir Country
 Okhotsk Shoreline
 Lowland of Kolyma River
 Highland of Omelon and chain of Gydan
 Chain of Tashchayakhtsch
 Chain of Iolusonny
 Chain of Verkhoyansk and Chersk
 New Siberian and Beling Islands
 Siberian highland
 Aldan Olenno, Vitimskiy Legion
 Zabaikal'ye
 Yenisey Mountain Range (Sayan mountains)
 Alstau of Kuznetsk
 Valley of Kuznetsk
 Altay
 Salogir
 Kazakhstan
 Pogranichnaya Dzhingariya (Frontier Dzhingariya)
 Middle Asia
 Krasnovodsk
 Zakavkaziye
 Caucasus
 Crimea
 Ural
 Tuman Peninsula Kamun, Bolshezemelskaya Tundra
 Pai-Khai
 Novaya Zemlya
 Zemlya Frantsa Iosifa (Territory of Franz-Josef)
 Ukraine
 Kareliya
 Kolskiy Peninsula

3. Periods in millions of years
- 4. Era
 - 5. Archeozoic
 - 6. Proterozoic
 - 7. Paleozoic
 - 8. Mezozoic
 - 9. Cenozoic
 - 10a. Cambrian
 - b. Silurian
 - c. Devonian
 - d. Carboniferous
 - e. Perm
 - f. Trias
 - g. Jurassic
 - h. Mel
 - i. Tertian
 - j. Quaterian

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(B) KEY

1. SCHEMATIC MAP OF VOLCANOS OF KUTIL ISLANDS

2. Volcanos

- * active
- submarine
- 0 dying out
- extinguished

3. List of Volcanos

- | | | |
|----|---|---|
| 4. | 1. Submarine in vicinity of Island Alaid | 39. Peak Uratman |
| | 2. Alaid | 40. Peak Prevo |
| | 3. Taketomi | 41. of Calder Zaveritskiy |
| | 4. Ebeko | 42. Milna |
| | 5. Meozhidannyy (Unexpected) | 43. Goryashechaya Sopka (Burning Volcano) |
| | 6. of Bogdanovich | 44. Submarine southwards of Island Simushir |
| | 7. of Levashayev | 45. of Brouten |
| | 8. of Vernadskiy | 46. Chirpoj |
| | 9. of Fersman | 47. Chernyy (Black) |
| | 10. of Arsen'yev | 48. Snou (Snow?) |
| | 11. of Levinson-Lessing | 49. Brother's Chirpojey |
| | 12. Chikurachki | 50. Eoko |
| | 13. of Tatarinov | 51. Desantnyy |
| | 14. of Lomonosov | 52. Antipina |
| | 15. of Calder Karpinskiy | 53. Trezubets (Trident) |
| | 16. Peak of Fuss | 54. of Berg |
| | 17. Shirinki | 55. Kolokol (Bell) |
| | 18. Makanrushi | 56. of Borzov |
| | 19. Avos' (Maybe) | 57. of Retushkov |
| | 20. Nemo | 58. Triestry (Three Sisters) |
| | 21. of Shetakov | 59. of Rudakov |
| | 22. of Kryzhanovskiy | 60. Iva |
| | 23. Peak of Krenitsyn | 61. Kamuy |
| | 24. of Servergin | 62. Demon |
| | 25. Sinarka | 63. Medvezhiy (Bearlike) |
| | 26. Aka | 64. Kudriavyy (Curled) |
| | 27. Kuntomintar | 65. Men'shoy Brat (Small Brother) |
| | 28. Ikarma | 66. Chirip |
| | 29. Shirinkotan | 67. of Bogdan Khmelnitskiy |
| | 30. Kamennyye Lovushki (Stone traps) | 68. of Baranskiy |
| | 31. Submarine westwards of Kamennyye Lovushki | 69. of Teben'kov |
| | 32. Raykoke | 70. Tsararipu (Machechka?) (Stepmother?) |
| | 33. Peak of Sarychev | 71. Drakon (Dragon) |
| | 34. Russhue | 72. Yermak |
| | 35. Submarine between the Islands of Basshua and Ushishir | 73. Ivan Groznyy (Ivan the Terrible) |
| | 36. Ushishir | 74. Motonopuri |
| | 37. Pallas | |
| | 38. Ketoy | |

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list of volcanoes continues

75. Eurevestnik (Heroic of Tempest)
76. Stokap
77. Atsonypuri
78. of Calder Urbich
79. of Kakeer Ivinaya Pasti (Lyona Jaw)
80. Berutarube
81. Iaruy
82. Tyatya (Daddy)
83. of Endeleyeve
84. Golovina
85. Notoro
86. Tomari

END OF KEY B

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RESTRICTED**1. Schematic Map of Volcanoes of Kamchatka****2. Volcanos**

* Active
 O dying out
 --- extinguished
 --- assumed lines of cracks

3. List of Volcanos

- | | |
|--|---|
| 4. 1. Snelveluch | 39. of Ivanov |
| 2. Kharchinskij | 40. Tsentralnyy Semyachik (Central Semyachik) |
| 3. Zarechnyy (Behind river) | 41. Sobstvenno Tsentralnyy Semyachik (Proper Central Semyachik) |
| 4. Pleskiy (Flat) | 42. Purlyashchik (Noisy) |
| 5. Sredniy (Middle) | 43. Bolshoi Semyachik (Big Semyachik) |
| 6. Klyuchevskoy | 44. Berezovyy (of birch) dvoyney (double) |
| 7. Kamen' (Stone) | 45. Malyi Semyachik (Small Semyachik) |
| 8. Bezvyanney (nameless) | 46. Stena (Wall) |
| 9. Zimina | 47. Tribrezhnyye (at seashore) |
| 10. Ostryy Tolbachik (Sharp Tolbachik) | 48. Stupenchatyy Bastion (Stair-case Bastion) |
| 11. Floskiy Tolbachik (Flat Tolbachik) | 49. Sobolinyy (of sables) |
| 12. Bolshaya Udina (Big Udina) | 50. Sukhoj (Dry) |
| 13. Malaya Udina (Small Udina) | 51. Dvor (Yard) |
| 14. Shish | 52. Karymskiy |
| 15. Kinchoklok | 53. Kazletyy |
| 16. Kizimen | 54. Akademii Nauk (of Acad Sci) |
| 17. Poputnyy (| 55. Odnobokiy (One sided) |
| 18. Urts | 56. Krayniy (on border) |
| 19. Konredi | 57. of belyankin |
| 20. Piyva | 58. of Ditzmar |
| 21. Bogachevskiy | 59. Kazvalennyy (broken) |
| 22. of Gavrilov | 60. of Zavaritskiy |
| 23. Kolkhoznyy | 61. Bakenin |
| 24. of Komarov | 62. Gorb (bump) |
| 25. Gamchen | 63. Vulcanoid |
| 26. of Schmidt | 64. Veyer (Fan) |
| 27. Kronotskiy | 65. Dzenzurskiy |
| 28. of Krashennikov | 66. Yur'yevskiy |
| 29. Unana | 67. Zhupanovskiy |
| 30. Taunshits | 68. Prevyy (Right) |
| 31. Uzon | 69. Kupol (Cupola) |
| 32. Kikhpinych | 70. Sarey (Barn) |
| 33. Vershine (Peak) | 71. Arik |
| 34. Kulakova | 72. AAK |
| 35. Zapadnyy Baraniy (West Baraniy) | |
| 36. Vostochnyy Baraniy (East Baraniy) | |
| 37. Popkova (of Popkov) | |
| 38. Plosko-Kruglenskiy (Flatly Round) | |

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- | | | | |
|------|--|------|---------------------------------------|
| 73. | Koryakskiy | 111. | Khangan (hanger) |
| 74. | Avecha | 112. | of Levinson-Lessing |
| 75. | Kozel (goat) | 113. | Iehinskij |
| 76. | Mishennyj | 114. | Chingeinge |
| 77. | Shapochka (hat) | 115. | Anaun |
| 78. | Taburetka (shelf) | 116. | Chashakondzha |
| 79. | Babij Kamen (woman's stone) | 117. | Belyy (white) |
| 80. | Barkhatnyj (of velvet) | 118. | Tsep Kayketepan (Chain of Kayketepan) |
| 81. | Goryachiy (hot) | 119. | Tsep Ketepan (Chain of Ketepan) |
| 82. | Vilyuchik | 120. | Elyuelik |
| 83. | Opala | 121. | Min'chventen |
| 84. | Tolmachevskije Konusy
(Cones of Tolmachevskije) | 122. | Krasnaya Sopka (Red volcano) |
| 85. | Veprestitelnaya Verhnina
(Asking peak) | 123. | of Slyunin |
| 86. | Gorelyy Khrebet (Burning
Mountain range) | 124. | of Margaritev |
| 87. | Mutnovskiy | 125. | of Erman |
| 88. | Sevanskiye Konusy (Cone of
Sevanskiye konusy) | 126. | Leytungey |
| 89. | Asacha | 127. | Kruglaya Sopka (Round volcano) |
| 90. | Predpolagayemaya Verhnina
(Assured peak) | 128. | of Rirozhnikov |
| 91. | Piratkovskiy Pik (Peak of
Piratkovskiy Pik) | 129. | Shishel |
| 92. | Leveberezhnyye Konusy (Cones
on the left shore) | 130. | Stolbovoy (Strut like) |
| 93. | Priyemysh (Adopted) | 131. | Orlovskiy |
| 94. | Khodutka | 132. | Kunfilok |
| 95. | Sakhack (Belenkiy) (white) | 133. | Sherokhovatyj (rough) |
| 96. | Keudach | 134. | Kinynok |
| 97. | Nogot (nail) | 135. | Kurtochnyy |
| 98. | of Ryabushinskij | 136. | Lezhitts |
| 99. | Zheltovskiy | 137. | Aymelkan |
| 100. | Il'inskiy | 138. | Aligey |
| 101. | likiy Greben (Wild comb) | 139. | Melpe |
| 102. | Serdsee Alaida (Heart of Alaida) | 140. | Tylele |
| 103. | Nizkiy (low) | 141. | Massa (mass) |
| 104. | Chayachiy (expecting) | 142. | Baycare |
| 105. | of Koshelev | | |
| 106. | Kambalnyj | | |
| 107. | of Mashkovtsev | | |
| 108. | Yavino | | |
| 109. | Kichiva (malaya Ipelka)
(Small Ipelka) | | |
| 110. | Ipelka | | |

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